

Patent Abstracts of Japan

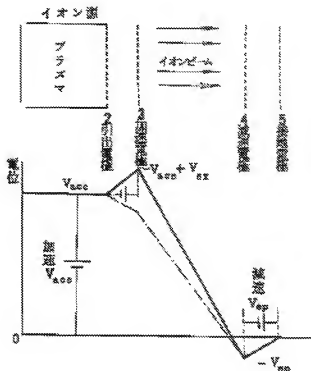
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TITLE : ION BEAM OPERATION METHOD IN
 ION DOPING DEVICE



ABSTRACT : PURPOSE: To shorten processing time per substrate so as to improve processing capacity and stabilize energy of ion beam applied on a substrate by setting a voltage of an acceleration electrode to a chamber switchable to positive and negative.

CONSTITUTION: Relative voltage V_{ex} applied on an acceleration electrode 3 is set switchable to positive and negative. Namely, positive/negative polarity of drawn power supply is set to be changeable. As a result, electric potential of a drawn electrode 2 reaches acceleration voltage $V_{acc} \pm V_{ex}$. In the case of plus sign $+$ ($V_{acc} + V_{ex}$), the voltage of the electrode 3 becomes higher than plasma potential so that positive ion in plasma cannot climb over the voltage wall formed by the electrode 3 and is enclosed inside of a chamber. And in the case of minus sign $-$ ($V_{acc} - V_{ex}$), voltage of the electrode becomes lower than that of the chamber and positive ions flow from plasma to the electrode side so as to be drawn as ion beam. Rising time of ion beams is thus shortened so as to improve processing capacity.

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